

**TWO NEW CAVE SPIDERS OF GENERA *TETRABLEMMA*  
(*TETRABLEMMINAE*, *OOPIIDAE*) AND  
*DOLICHOCYBAEUS* (*CYBAEINAE*)**

Toshihiro KOMATSU

*Tetrablemma shimojanai* n. sp.

(Japanese name: Jabaragumo)

Loc. and date : Inamiji cave, Ishikawa-shi Okinawa, Sep. 28 1965. 1 adult male.  
Collector : Matsuei SHIMOJANA

Male : Total length 1.06mm. Cephalothorax, length 0.48mm., width 0.38mm.  
Abdomen, length 0.58mm., width 0.46mm. Leg II 1.034mm. (0.320+0.134+0.210+0.170  
+0.200). Palp 0.700mm. (0.156+0.084+0.120+0.340). AE : clypeus=2 : 5.5 in ratio.

Color (in alcohol) : Cephalothorax brownish orange with no pattern. Chelicerae darker.  
Maxillae, labium and sternum are brownish orange. Eyes white. Abdomen : Dorsal  
and ventral scuta and longitudinal folds of both sides are pale brownish orange and other  
parts yellow.

Ocular area is located at anterior part of the cephalothorax. 4 eyes are arranged in an  
inverted U-shape as seen from above. Carapace is longer than wide and its posterior part  
with a large conical projection. Clypeus steeply sloped forwards and more than 2 times  
of the diameter of anterior eye. Chelicerae moderately strong. Inner margin of the basal  
part with a projection which is made of two segments and the apical segment pointed  
forwards. Outside of apical end of the palatium armed with a small projection or a  
rastellum. Maxillae strongly inclined towards the labium. Labium free and rather  
triangular in shape, is wider than long 7 : 3 in ratio. Sternum longer than wide 19 : 15 in  
ratio.

Palp : Plate 3. Tip of the embolus armed with a small black projection. Abdomen ;  
oblong, rather depressed. Dorsal scutum covering most part of the abdomen. There are 4  
ventral scuta. Anterior scutum is largest and surrounds the pedicel and with a pair of  
lung covers. Its both sides of the posterior edge are darker. Next scutum is very short.  
3rd scutum is rather long and 4th scutum is trianguloid in shape and includes the  
spinnerets. Side part of the abdomen with 4 longitudinal corneous folds as a bellows of  
camera, but 4th fold occupies only at the anterior part. And 3 folds between the  
posterior part of the dorsal scutum and 4th ventral scutum. Abdomen with scattered small

rings with a short hair on each. I can't figure out the number of the spinnerets. Legs short and moderately strong, with rather feathery hairs but no spine. Tip of the tarsus with an onychium. Paired claws of the 2nd leg armed with a single series of 6 teeth and inferior claw with one tooth. Tibia and metatarsus with some trichobothria, but tarsus with no trichobothrium.

This species resembles *T. cambridgei* E. B. BRYANT 1940. It differs from that species in the following characters.

<i>T. shimojanai</i>	<i>T. cambridgei</i>
Chelicera not porrect and with a projection as <i>T. medioculatum</i> , but pointed forwards.	Chelicera slightly porrect and with no projection.
Carapace with a large projection.	Crapace with a small projection.
Embolus short and bifurcated.	Embolus rather long.
Abdomen rather depressed.	Abdomen almost as high as long.
Ocular area located at anterior part of carapace.	Ocular area located at rather anterior part of carapace.

#### Discussion :

*Tetrablemma medioculatum* (♂) from Ceylon, the type of this genus, was described by O.P. Cambridge (1873), and was classified into a new family Tetrablemmidae. 4 eyes are placed grouping on a circular eminence and on the centre of the cephalothorax. Petrunkevitch (1928) classified it into Gamasomorphinae of the family Oonopidae. Butler (1929) described *T. okei* (♀) from Australia, and Bryant (1940) described *T. cambridgei* (♂, ♀) from Cuba. The ocular area of these two species are located rather on the anterior part of the cephalothorax, and these authors classified these two species into Tetrablemminae of the Oonopidae. Marples (1964) described a new species, *T. samoensis* (♂, ♀) from Samoa, and classified it into the Tetrablemmidae. In 1963, Roewer described two new species *T. alterum* (♂, ♀) from Saipan and *T. unicornis* (♂, ♀) from Palau. The ocular areas of thier males are located rather on the posterior part of the cephalothorax. Roewer insists that the *Tetrablemma* and its allied genera should be classified into Hadrotarsidae.

On the other hand, Levi (1968) re-examined the holotype specimen of *Hadrotarsus babirusa* Thorell 1881, and found *Hadrotarsus* much closer to Anapidae and Theridiidae. *Tetrablemma* looks like *Hadrotarsidae*, but the female of *Hadrotarsus* has a palpal claw, while *Tetrablemma* has no claw. *Hadrotarsus* has anterior median eyes, but *Tetrablemma* has no anterior median. (Some species live in caves.) The palpal organ of *Hadrotarsus*

with a long piliform embolus, is complex. But the palpal organ of *Tetrablemma* is simple. About the male of *T. shimojanai*, the ocular area is located on the anterior part of the carapace and its abdomen is rather depressed. Its characters indicate that this genus should be classified into Oonopidae.

*Dolichocybeus nichikoensis* n. sp.

(Japanese name: Nichiko-zunagagumo)

Loc. and date: Nichiko cave, Kumamoto prefecture, Sep. 27 1967. 1 adult female.  
Collector: Teruo IRIE

Female: Total length 4.54mm. Cephalothorax, length 2.17mm., width 1.13mm. Abdomen, length 2.4mm., width 1.93mm. Leg I 6.40mm. (1.78+0.70+1.53+1.38+1.03). Leg II 6.00mm. (1.68+0.63+1.38+1.33+1.00). Leg III 5.17mm. (1.40+0.63+1.00+1.23+0.90). Leg IV 6.66mm. (1.80+0.63+1.47+1.73+1.00). Eyes: Ratio of major diameter, AME: ALE: PME: PLE=2.7:6.3:5.0:6.0. Ratio of interval, AME-AME=3.0, AME-ALE=2.5, PME-PME=6.9, PME-PLE=6.0, ALE-PLE=3.5. Clypeus=9.5. Anterior row of eyes recurved and posteriors weakly recurved as seen from above. Anteriors straight and posteriors strongly procurved as seen from in front. Ocular area is wider than long 12:5 in ratio and about three-fourths as wide as carapace at that level.

Color (in alcohol): Carapace is dull yellowish brown and becoming darker anteriorly and has 3 pairs of pale blue spots. Chelicerae are reddish brown. Maxillae and labium are yellowish and tips white. Sternum slightly lighter. Legs are weakly annulated. Abdomen is pale grey in ground color, with a faintly indicated longitudinal stripe on the anterior one-third and its each side with 2 pairs of light spots, and 4 chevrons behind.

Both sides of the cephalic part are parallel. Longitudinal median furrow and radiating grooves are evident. Chelicera geniculated and with a boss. The outer margin of the fang furrow with 5 teeth and 4 proximal denticles. The maxillae are inclined inwards. Labium is wider than long 5:4 in ratio and its anterior margin distinctly procurved. The sternum rather longer than wide 31:29 in ratio. The anterior margin is straight and posterior part extends into 4th coxae. Leg: The order of length 4123. Limuli of 1st and 2nd legs are broadly truncated. Tibia I is longer than the metatarsus I. Paired claws of the leg I with 9 teeth, and the median claw with 2 teeth. Tarsus IV with 6 trichobothria. Tibia I has PVS1, PVS2, PVS3, PVS4, PLS3, PLS4, and RVS1, RVS2, RVS3, RVS4. Tibia II has PVS1, PVS2, PLS1, PLS2, PLS3, PLS4 and RVS1, RVS2, RVS3. Metatarsus I has PVS1, PVS2, PVS3, PLS2 and RVS1, RVS2,

RVS3, RLS. Metatarsus II has PVS1, PVS2, PVS3, PLS1, PLS2, PLS3, PLS4, VS and RVS1, RVS2, RVS3, RLS.<sup>1)</sup>

Colulus represented by a pair of 3 setae. Anterior spinnerets are thickest and with a very short second segment. Interval is very much narrower than the diameter of them 1 : 7 in ratio. Posteriors are slender and with a short second segment, but not clearly recognizable. Located rather outside of the anteriors.

Genitalia: Plate 3. It is allied to that of *Dolichocybaeus fuujinensis* Komatsu 1968. I, II and III spermathecae connected to each other by short and wide connecting ducts. Gate-organ<sup>2)</sup> occupies at posterior part of the 2nd spermatheca near the entry of the duct II. The outer part of this organ does not makes a mucro in a depression of the wall.

### Explanation of Plate

#### Plate 3.

Fig. 1-6. *Tetrablemma shimojanai* n. sp. male.

1. Lateral view. 2. Dorsal view. 3. Ventral view of abdomen. 4. Ventral view of chelicerae, maxillae, labium and sternum. 5. Dorsal view of right palp. 6. Retrolateral view of right palp.

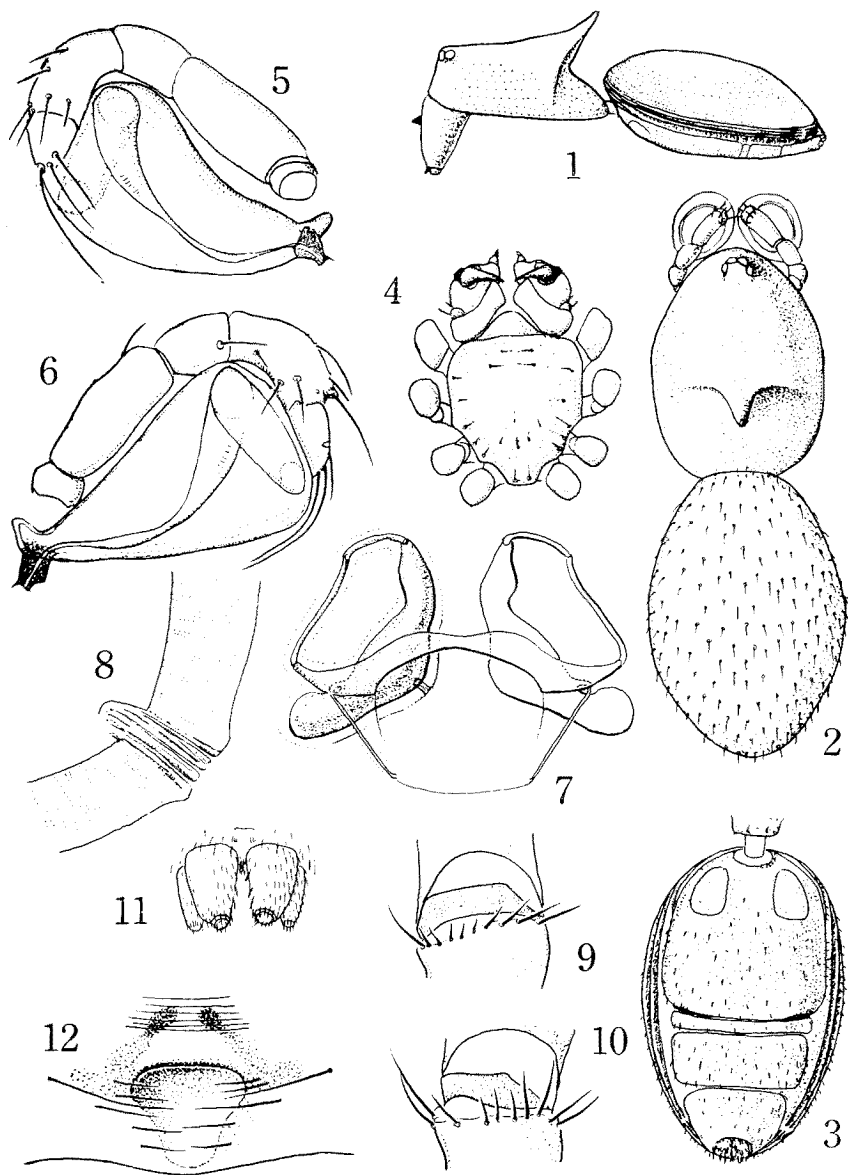
Fig. 7-12. *Dolichocybaeus nichikoensis* n. sp. female. 7. Ventral view of genitalia. 8. Gate-organ of the right side. 9. Limulus of the left leg II. 10. Limulus of the left leg III. 11. Spinnerets. 12. Epigynum.

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① T. Komatsu, 1968 : Explanation of the Spines of 1st and 2nd legs. Cave Spiders of Japan II. *Cybaeus*, *Dolichocybaeus* and *Heterocybaeus* (Cybaeinae) p.24

② Spermatheca II of this genus has a bundle of ducts or gate-organ, which is embodied in the thick wall. This gate-organ occupies at the posterior part of the 2nd spermatheca near the entry of the 2nd duct. In many cases, the outer part of this organ makes a mucro in a depression of the wall and the inner part a mucro directly.

The purpose of this organ is not ascertained, but the gate-organ is probably considered to take in and out liquid through the minute ducts.



T. KOMATSU : *Tetrablemma shimojanai* sp. nov. and *Dolychocybaeus nichikoensis* sp. nov.